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E FARM INDEX

ECONOMIC RESEARCH SERVICE ★ U. S. DEPARTMENT OF AGRICULTURE ★ MAY 1966

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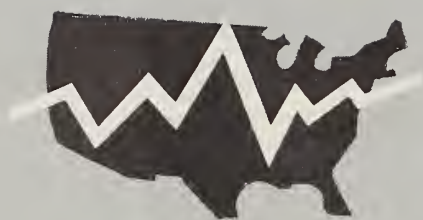
New Conquerors of Peru: Peruvians

Food Money 'Round the World

the ubiquitous bird

BIGGER ★ FASTER ★ CHEAPER





economic trends

ITEM	UNIT OR BASE PERIOD	'57-'59 AVERAGE	1965		1966		
			YEAR	MARCH	JANUARY	FEBRUARY	MARCH
Prices:							
Prices received by farmers	1910-14=100	242	248	239	263	272	271
Crops	1910-14=100	223	232	237	228	236	233
Livestock and products	1910-14=100	258	261	241	293	302	303
Prices paid, interest, taxes and wage rates	1910-14=100	293	321	318	327	329	331
Family living items	1910-14=100	286	306	303	309	312	313
Production items	1910-14=100	262	276	273	281	282	284
Parity ratio		83	77	75	80	83	82
Wholesale prices, all commodities	1957-59=100	—	102.5	101.3	104.6	105.4	105.4
Commodities other than farm and food	1957-59=100	—	102.5	102.0	103.5	103.8	104.0
Farm products	1957-59=100	—	98.4	95.4	104.5	107.4	106.8
Food, processed	1957-59=100	—	105.1	101.8	110.3	111.8	111.7
Consumer price index, all items	1957-59=100	—	109.9	109.0	111.0	111.6	—
Food	1957-59=100	—	108.8	106.9	111.4	113.1	—
Farm Food Market Basket: ¹							
Retail cost	Dollars	983	1,042	1,015	1,073	1,095	—
Farm value	Dollars	388	409	386	444	458	—
Farm-retail spread	Dollars	595	633	629	629	637	—
Farmers' share of retail cost	Per cent	39	39	38	41	42	—
Farm Income:							
Volume of farm marketings	1957-59=100	—	118	88	131	90	92
Cash receipts from farm marketings	Million dollars	32,247	38,930	2,452	3,648	2,754	2,917
Crops	Million dollars	13,766	17,144	743	1,719	884	794
Livestock and products	Million dollars	18,481	21,786	1,709	1,929	1,870	2,123
Realized gross income ²	Billion dollars	—	44.4	42.2	—	—	47.0
Farm production expenses ²	Billion dollars	—	30.3	29.7	—	—	31.7
Realized net income ²	Billion dollars	—	14.1	12.5	—	—	15.3
Agricultural Trade:							
Agricultural exports	Million dollars	4,105	6,229 ³	696	506	519	—
Agricultural imports	Million dollars	3,977	4,088 ³	420	353	371	—
Land Values:							
Average value per acre	1957-59=100	—	139	139	145 ⁴	—	—
Total value of farm real estate	Billion dollars	—	159.4	159.4	165.9 ⁴	—	—
Gross National Product ²							
Consumption ²	Billion dollars	457.3	676.3	657.6	—	—	714.1
Investment ²	Billion dollars	294.2	428.7	416.9	—	—	452.6
Government expenditures ²	Billion dollars	68.0	105.7	103.4	—	—	111.8
Net exports ²	Billion dollars	92.4	134.8	131.3	—	—	143.6
	Billion dollars	2.7	7.1	6.0	—	—	6.1
Income and Spending ⁵							
Personal income, annual rate	Billion dollars	365.3	530.7	517.8	552.3	557.2	561.0
Total retail sales, monthly rate	Million dollars	17,098	23,600	22,884	25,023	25,472	25,643
Retail sales of food group, monthly rate	Million dollars	4,160	5,565	5,392	5,783	5,922	—
Employment and Wages: ⁵							
Total civilian employment	Millions	64.9	72.2	71.5	73.7	73.5	73.4
Agricultural	Millions	6.0	4.6	4.6	4.4	4.4	4.4
Rate of unemployment	Per cent	5.5	4.6	4.7	4.0	3.7	3.8
Workweek in manufacturing	Hours	39.8	41.2	41.3	41.5	41.6	41.6
Hourly earnings in manufacturing, unadjusted	Dollars	2.12	2.61	2.59	2.67	2.67	2.68
Industrial Production ⁵	1957-59=100	—	143	141	150	151	153
Manufacturers' Shipments and Inventories: ⁵							
Total shipments, monthly rate	Million dollars	28,745	40,279	40,285	42,665	42,705	—
Total inventories, book value end of month	Million dollars	51,549	68,015	63,708	68,594	69,018	—
Total new orders, monthly rate	Million dollars	28,365	41,023	40,712	43,986	44,020	—

¹ Average annual quantities of farm food products purchased by urban wage-earner and clerical-worker households (including those of single workers living alone) in 1960-61—estimated monthly. ² Annual rates seasonally adjusted first quarter. ³ Preliminary. ⁴ As of November 1. ⁵ Seasonally adjusted.

Sources: U.S. Dept. of Agriculture (Farm Income Situation, Marketing and Transportation Situation, Agricultural Prices, Foreign Agricultural Trade and Farm Real Estate Market Developments); U.S. Dept. of Commerce (Industry Survey, Business News Reports, Advance Retail Sales Report and Survey of Current Business); and U.S. Dept. of Labor (The Labor Force and Wholesale Price Index).

THE AGRICULTURAL OUTLOOK

In 1966 the nation's farmers likely will enjoy one of their most prosperous years. Realized net farm income this year probably will be up about a billion dollars over the \$14.1 billion estimated for 1965. Both cash receipts from farm marketings and direct government payments to farmers are expected to rise substantially over 1965 levels. However, production expenses may show a larger than usual increase this year.

COMMODITY HIGHLIGHTS

Fed cattle marketings were up about 6 per cent in the first quarter and will rise further in the second quarter, according to reported plans of feeders. There were 9.6 million head of cattle and calves on feed April 1, up 13 per cent from a year earlier. Placements into feedlots during the first quarter were up 24 per cent.

Cattle feeders have reported intentions to market 4.8 million head during April-June—4 to 5 per cent more than during the first quarter of this year and 12 per cent more than a year earlier. Fed beef production in the second quarter likely will be up as much as or more than the increase in marketings, as weights likely will average heavier.

Feed Grains Setting Records

Stocks of feed grains totaled 115 million tons on April 1, one million more than on that date in 1965. Domestic consumption during October-March was 5 per cent larger than a year earlier and the largest of record for that period. Record feed grain exports during October-March, totaling nearly 15 million tons, were more than 50 per cent above a year earlier.

Feed grain prices averaged about 3 per cent lower during October-March this year than in the same period of 1964/65. The much larger "free" supplies of feed grains have been primarily responsible for lower prices this year and probably will hold prices a little below a year earlier this spring and summer.

Milk Wholesale Prices Up, Production Down

National average support prices to farmers for manufacturing milk for the 1966/67 marketing year which began April 1 were set at \$3.50 per 100 pounds (78 per cent of parity). Prices for butterfat were set at 61.6 cents per pound (75 per cent of parity). Support prices were \$3.24 and 59.4 cents, respectively, in 1965/66.

Farmers received 6 per cent higher prices for milk sold wholesale in the first quarter of 1966 than a year earlier. Production averaged 5 per cent lower. Class I (bottled milk) prices in federal order markets during the second quarter of the year will be above the same period last year because of higher prices of milk for manufacturing and amendments which increased April-June Class I prices. These changes, together with the relatively shorter supply situation, will result in farm milk prices during the second quarter averaging above 1965 levels.

Manufactured dairy product removal under CCC programs in the 12 months ended March 31 amounted to 2.9 billion pounds milk-equivalent, compared with 8.2 billion pounds in 1964/65. Because of reduced marketings of milk and gains in commercial consumption, 1966/67 removals are expected to be less than last year's.

Poultry Production Climbing

Federally inspected slaughter of young chickens from January through mid-April ran 8 per cent above a year earlier. And, based on recent hatchery activity in 23 states, broiler output in the second quarter also will be up about a tenth from the 1965 level. Supplies of hatching eggs are likely to be large enough to at least sustain broiler production at the current margin over 1965 throughout the year.

Broiler prices have been well above a year earlier in recent months, despite the larger production. However, prices have weakened since mid-March, and broiler prices probably

will drop below a year earlier later in the year as the increase in production of pork gathers momentum and marketings from a larger turkey crop approach the seasonal peak. Competition from other foods is likely to continue to increase into early 1967.

Turkey producers are likely to raise at least 10 per cent more birds than the 105 million in 1965. Much of the increase is being marketed during the early part of this year while pork supplies are still short. Nevertheless, cold storage holdings for the holiday period are likely to build up more rapidly than in 1965.

Turkey prices to producers in March averaged 24.7 cents per pound, up from 22.6 cents in March 1965. Average prices for turkeys are likely to continue slightly above the 1965 level in April-June. In the second half, when cold storage holdings are rising seasonally and competition from red meats and broilers intensifies, turkey prices probably will decline as they did last year. In the main marketing months—the holiday period of September-December—they are expected to average below the 22.2 cents of that period last year.

Egg production in January-March totaled 44.4 million cases, down 2 per cent from a year earlier. However, producers, in response to the favorable egg/feed price relationships this past fall and winter, are now taking steps to increase production. Replacement pullet chicks hatched in January-March numbered 82 million, up from 72 million a year earlier. The influx of new pullets into laying flocks after mid-year is expected to resume the year-to-year increase in the rate of lay; later the number of layers will increase relative to a year ago as well as seasonally. Egg production is likely to be back to year-earlier levels by the third quarter and significantly above in the fourth quarter.

More Vegetable Acreage Planned

Early reports point to plentiful supplies of processed **vegetables** in the 1966/67 marketing year beginning July 1. Although carryovers at mid-1966 probably will be down from a year earlier, larger packs appear likely. Producers

have indicated plans to plant much more acreage this year than last. With average yields, output and resulting canned and frozen packs of most items would be up substantially. Total supplies of all commodities would be larger than those available this year, with those of snap beans, sweet corn, peas and tomato items especially large.

Smoke Signals

Based on prospective acreages and average yields (allowing for trend), the 1966 crop of flue-cured **tobacco** would be about a tenth above the previous year's small harvest; the 1966 crop of burley tobacco would be about 7 per cent below 1965-crop marketings. Adding expected carryovers, the 1966/67 supply of flue-cured would be about 1 per cent below 1965/66; that of burley, about 4 per cent below 1965/66.

Exports of unmanufactured tobacco in the calendar year 1965 totaled about 528 million pounds (farm-sales weight)—about a tenth below the nine-year high during 1964 and more than 4 per cent below the 1954-63 average. A major part of the decline was accounted for by reduced shipments to the United Kingdom, the leading foreign market for U.S. leaf. In the year ending June 30, 1966, tobacco exports may be significantly above fiscal 1965. Shipments of flue-cured, the principal export tobacco, in the current marketing year are expected to exceed those in 1964/65.

Cotton Carryover Climbs

Carryover of all kinds of **cotton** in the United States on August 1, 1966, is expected to total around 16.7 million bales (16.5 million upland cotton). This would be an increase of almost 2½ million bales from last August and exceeds the previous high of 14½ million in 1956. Although mill use during the 1965/66 season is expected to be up about 300,000 bales to about 9½ million bales, exports are declining sharply this year, more than offsetting the rise in mill use. Disappearance this crop year (1965/66) is expected to total about 12.7 million bales, down about a half million bales from the previous year and some 2½ million bales smaller than 1965 production.

SUCCESS BY DEBT

Farmers owing money usually operate larger farms, own more land and earn a higher net cash income.

There's one thing about farming you can be fairly sure of—the most aggressive operator in the area is probably in debt.

The borrowed money is generally funneled into enlarging operations and incomes. A nationwide survey of farmers with debts showed this about operators in debt when compared with debt-free farmers:

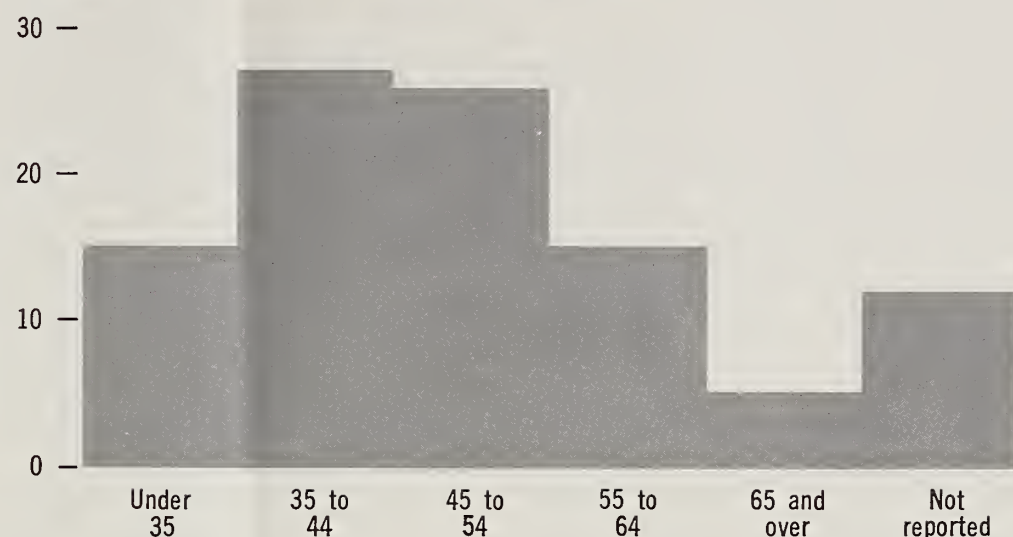
—They were more willing to take risks and less willing to work only with the assets they owned outright.

—They usually conducted larger scale operations.

—They owned more land, leased more land and had buildings of greater value.

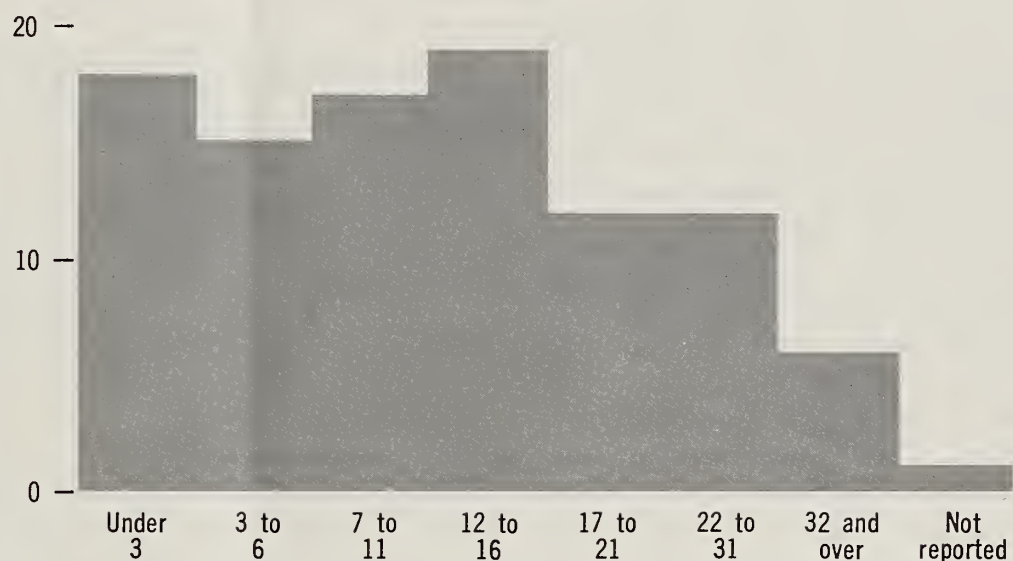
Per cent of
farm debt

AGE OF OPERATOR



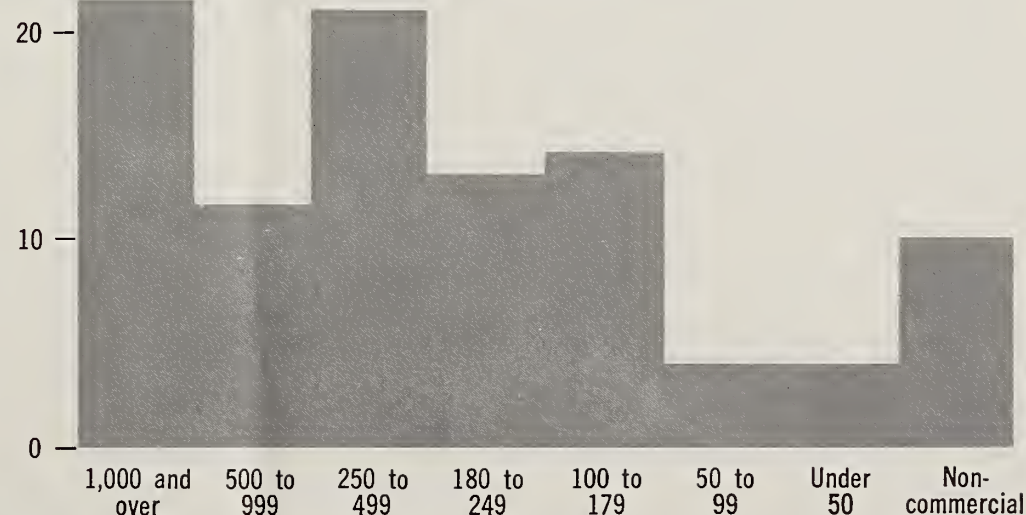
Per cent of
farm debt

YEARS ON THIS FARM



Per cent of
farm debt

SIZE OF FARM (ACRES)



—They sold products of greater value, earned a higher net cash income from farming and had larger off-farm incomes.

Farmers who were particularly apt to be in debt operated livestock farms, were between 35 and 55 years old and had \$1,000 to \$3,000 in net cash incomes from sales of farm products in 1960. In relation to land and building values, dairy farmers carried larger debts than any other group.

On the other hand, groups using little credit were cotton and tobacco farmers, operators of farms of less than 100 acres and those 65 or more years old.

Farmers appeared to have received credit more on the value of land and buildings owned than on their earning capacity.

The younger farmers had larger debts than the older ones both in absolute size and in relation to income and to value of the property owned. Similar relationships appeared when farmers were grouped by the length of time they had occupied the farm—the most recent arrivals having the heavier debts. Also, part-owners had larger debts than full-owners, full-owners larger debts than tenants.

Ten per cent of the owner-operators of commercial farms had what is regarded as heavy real estate debts. Another 20 per cent had moderately large debts of this type (ratio of debt to the value of land and buildings owned).

Similarly, considering all farmers, including tenants, 15 per cent had total debt exceeding $7\frac{1}{2}$ times their 1960 net cash farm incomes. Another 25 per cent had debts ranging from $1\frac{1}{2}$ to $7\frac{1}{2}$ times their incomes.

The figures indicate that some 10 to 15 per cent of the farmers were heavily indebted in 1960. Also, the data indicate that a large potential existed in 1960 for increased farm borrowing on a relatively safe basis.

And this potential has been used by farmers in recent years. Their

borrowing has increased nearly 60 per cent since the end of 1960.

Data from lending institutions and from USDA's series on involuntary transfers of farms indicate that in 1960 collections of farm loans were generally excellent and delinquencies and foreclosures few.

It appears that farm debt could rise considerably above present levels without endangering the solvency of agriculture provided incomes are reasonably well maintained. This is true if the future borrowing is done by farmers who are not already heavily indebted, if borrowers continue to make constructive use of credit and if farmers and lenders continue to exercise the restraints they have in the past. (1)

Land Needs for a \$5,000 Income Go Up If Crop Prices or Allotments Drop

How much openland do farmers need to earn \$5,000 for their labor and management in the Limestone Valley of Alabama? How do land values, commodity prices and crop allotments affect openland requirements?

Recently ERS economists, in cooperation with the Alabama Agricultural Experiment Station, used linear programming to determine the openland requirements and the most profitable combination of enterprises to yield returns of \$5,000 after allowing for interest on investment.

With land values averaging about \$200 an acre, cotton priced at 31.2 cents per pound of lint and the cotton allotment held at the 1963 level, farmers in the area needed a minimum of 98 acres of openland to net returns of \$5,000. The most profitable enterprises included cotton to the allotment limit, oats, corn, hogs and beef cows.

However, an increase in the value of land per acre caused a big jump in the number of acres of openland required to yield the

specified income. At \$400 per acre, a farmer needed 117 acres to receive returns of \$5,000.

Changing the cotton allotment level by 15 per cent changed the acreage required to yield \$5,000 by about one acre. Lowering the cotton price to 26 cents per pound of lint increased the acreage required by 7.5 acres. With cotton at this price and hogs at \$16 per hundredweight, it was found to be more profitable to produce hogs than cotton. (2)

Management Service Firms May Hold Key to Help Farmer Increase Profits

A farmer is apt to find that giving an outsider a hand in managing his farm can yield greater profits.

Big business has for years called in management consultants to cut costs, boost profits. Now management advice is becoming available—on a limited scale—to the farmer.

Management services have been around for a while, particularly in those farming areas served by professional farm management services. Now suppliers of farm inputs are coming forth with a new package of management services. This more widespread availability of advice is being brought about to a great extent by rapid changes in the science of crop production and the use of the computer which can store much information and supply quick answers.

In the tight cost-return situation in which our farms operate these days, management tips the balance from loss to profit. Farm management analysis applied to scientific data on crop production can determine the most profitable acreage of each crop, the amount of seed to be planted, rates of fertilizer application and rate of pesticide treatment.

Makers of fertilizers and other farm inputs sometimes furnish such information along with their goods. For instance, an Illinois

chemical company is making plans to recommend a total crop production system for the soybean farmer based on selected varieties, special fertilizers, pre-emergence chemical weed control, alteration of between row and within row plant spacing to insure maximum use of energy, a special growth regulator to change the shape of the soybean plant and reduce lodging plus advanced computerized information on moisture supplies.

Despite the gain to manufacturer and farmer, the growth of managerial services by farm supply firms is not expected on a mass scale in the immediate future.

In crop production, rapid progress is being made in gathering accurate data on factors affecting production—moisture, plant nutrients, plant population and pest control measures. Also, the cost of major purchased inputs are known in advance and product prices can be predicted fairly accurately.

Thus, one might expect managerial services to develop first in major crop producing areas with a large proportion of commercial farms, such as in the Corn Belt.

Livestock production, however, presents a somewhat different picture. Major factors which reflect heavily in the profit-loss figure are not consistent. These include prices for slaughter animals and costs of such major inputs as feeder cattle and feeder pigs. As a result, one might expect a slower development of complete managerial services to livestock producers.

But regardless of how much management advice is available, the farmer must still make the final management decisions to reap increased profits. The management service can supply much important data and analysis. But the farmer must still recognize quality, know when and how to make equipment investments, when to expand or contract his overall operations and other decisions along this line. (3)

Answer, Please

It'll be survey time soon. Some 50,000 farmers will be visited by interviewers working for USDA's Statistical Reporting Service.

The farm visits in the first 10 days of June supply information which is added to the still heavily relied on mail-in reports of individual farmers and businessmen. These data go into the crop and livestock reports issued during the height of the farming season in late June and July.

Enumerators gather data about planted acres, livestock numbers, farm wages and labor. The survey will be particularly helpful in determining the number of acres planted this year.

For the survey, farms are chosen at random from aerial photos and country road maps of the 48 contiguous states. (4)

High Irrigation Produces Best Yields In Projections in Western Oklahoma

Nature often is bountiful, but not always dependable. One undependable resource over which man can have some control is water.

ERS economists picked out a high risk drought area in the Great Plains to see what effects irrigation would have on crop yields. Selected was Roger Mills County in Western Oklahoma.

Four model farms were set up ranging from no irrigation to high irrigation, that is, the amount of water needed to fill in the gap between expected rainfall and the amount of moisture required by the crop.

In general, the best yields came from high irrigation. Furthermore, when only a limited amount of water was available, it was more profitable to irrigate fewer acres at the highest level than more acres at a lower level.

As the water supply per farm increased, so did total labor, capital requirements and net farm income. Annual labor increased about seven hours per irrigated acre. Net farm income rose about

\$13.47 per irrigated acre when there was an unlimited water supply. Initial nonland capital expenditures amounted to about \$57 per irrigated acre.

About 1.4 acre-feet of water was required for each acre of bottomland irrigated. With average rainfall, each acre-foot of irrigation water available to the farmer was worth about \$7.30 (including all variable inputs such as family labor), or about \$10.15 per irrigated acre. (5)

Model Cattle Ranches in Southwest Show Profit Picture Reflects Size

Model cattle ranches set up in a number of sizes and under various weather and land conditions of Arizona and New Mexico showed that smaller ranches averaged a 4 per cent loss on their investment and larger operations averaged a 6 per cent profit.

In 1959 over 88 per cent of the land in farms of both states was devoted to range cattle operations; ranches averaged 10,320 acres and gross sales per ranch averaged \$22,651.

For the model ranches, 1960 figures were used. The investment, cost and ranch organizational data were obtained primarily from interviews with about 140 ranchers.

Animal units were used in computations instead of head of cattle. These units were determined from the following values: mature cows, .91; yearling steers, .68; yearling heifers, .67; bulls, 1.20; calves, .51; and horses, 1.00. Average animal units used were 35 for the smallest ranch, 512 for the largest.

The representative ranches looked something like this:

—Land investment varied from \$5,636 to \$155,581, a per animal unit investment of from \$68 to \$330. Land investment decreased as grazing on federal ranges increased.

—Value of buildings and im-

provements varied from \$2,515 to \$45,182, a per animal unit investment of from \$40 to \$264. The investment per animal unit decreased as the size of the ranch increased.

—Investments in livestock varied from \$130 to \$160 per animal unit, depending on age and class composition of the inventory and differences in weights.

—Total investment in land, buildings, improvements, machinery, equipment and livestock varied from \$21,280 to \$288,578, a per animal unit investment from \$256 to \$722.

—Total operating costs ranged from \$3,828 for the 35-animal-unit ranch to a high of \$24,027 for the 512-animal-unit ranch. These costs per animal unit averaged \$123 for the smaller ranches and \$49 for the larger. This represents a cost of 42.7 cents per pound of beef produced for the smaller ranches and 16.1 cents for the larger ranches.

—Gross income per animal unit in the livestock inventory averaged from \$55 for the smaller ranches to \$59 for the larger ranches; net cash income per animal unit averaged from \$13 to \$27; and net ranch income averaged from a loss of \$21 to a profit of \$15 per animal unit. (6)

The Speedy Computer Can Project Hog and Beef Prices If... If... If...

The computer is a pretty good machine to have around. It solves a thousand problems while one is worked out by hand.

Ask it the right questions, the computer will give you the right answers in almost unlimited number. And it's the economist, not the machine, who works out the initial set of assumptions, sets the limits for the problem.

Take, for instance, the attempt to predict hog prices. The question given the machine might read like this: "What will hog prices

be 10 years from now if . . . :” If the price of beef stays the same; if consumer incomes continue to rise; if the public doesn't change its taste in meat; if farm technology, productivity, output continue their current trends; if a dozen other special conditions are met.

Within the limits set by the given assumptions, the computer will provide the answer or, more likely, a whole set of answers for different combinations of assumptions.

The computer's accuracy in projecting hog and beef prices was recently put to the test by ERS economists in cooperation with the Iowa Agricultural Experiment Station.

The economists set the clock back to 1954 and fed into the machine data for factors affecting hog prices. Predicted prices for nearly 10 years of projections remained highly consistent with actual prices for the decade.

However, predicted prices began to vary noticeably from actual prices during the final year of the test though still remaining impressively close. (7)

Big Spreads

Texas has the most farms in the U.S. but drops well behind several other states when it comes to size per farm.

Preliminary estimates for 1966 show the Lone Star State has 196,000 farms with an average of 785 acres each. North Carolina comes next with 183,000 farms but averages out at the smallest acreage with only 93 each.

Arizona has the largest average size in the country. There the average operation is 7,031 acres. Nevada comes next with 4,400, followed by New Mexico with 3,527.

These estimates of farmland exclude government-owned land grazed on a permit or fee basis but include land leased from the government for grazing purposes. (8)

U.S. Farm Income, Employment Rising; Domestic, Overseas Markets Strong

Realized net farm income will probably be up about \$1 billion this year over the \$14.1 billion estimated for 1965. This would make it the best year since 1947 and 1948.

However, the index of prices (1957-59 = 100) received by farmers in 1965 was 102, slightly below the 103 registered in 1949. And the index of prices farmers have to pay for production inputs climbed from an index of 86 in 1949 to 110 in 1965.

Some of the \$1 billion net farm income increase this year will be the result of record levels of employment and income for the economy as a whole. Farm products are in strong demand in the domestic markets. Large gains are also in prospect for exports.

Farmers' realized gross income in 1966 should show another sizable gain. Cash receipts from farm marketings this year may rise around \$2 billion over the \$38.9 billion estimated for 1965.

Government payments to farmers are expected to rise by close to a billion dollars over last year's total of \$2.5 billion, reflecting changes in the farm programs. The increase in government payments does not represent an increase in total costs of farm commodity programs. With price support loan levels for cotton and wheat at competitive world prices, the reduction in payments to domestic cotton users and to exporters of cotton and wheat will offset much of the increase in payments to farmers.

Farm production expenses are expected to rise more than usual in 1966 and may be around \$32 billion, a record high. This will result mainly from increased outlays for such current operating expenses as purchased livestock, fertilizer and many miscellaneous items. Overhead costs also will be up sharply in 1966. (9)



FOR WHOM THE WELL TOILS

Bigger cities, increased industry and more people seeking recreation are giving eastern judges and lawmakers an old western problem: Who gets how much of the water supply?

As cities, industries and recreation compete for water with the farmers in the eastern half of the United States, statehouses and courthouses are increasingly faced with this problem: Who gets how much of the scarce resource?

Water rights vary from place to place, but in many eastern states an owner of land along a stream usually can take as much water as he reasonably needs, considering the rights and needs of other landowners along the stream.

Farm household and stock watering uses, though, often have a preferred status.

It's up to the judges and juries to decide whether a person's use is "reasonable."

The question of reasonable use can arise when someone builds

a dam across a stream and liabilities lie at every turn. What if the dam backs up water onto his neighbor's land? Or what if the dam impedes the area's drainage and stops the passage of fish and boats? What if the stream is cut to a trickle and pollution sets in?

The idea of reasonable use makes landowners think twice before damming streams and putting in expensive canal systems. On the other hand, a neighbor affected by the dam may be discouraged from suing since he's equally hard put to say what's unreasonable.

Riverbank landowners usually get water rights to navigable rivers as well as to smaller streams. On major rivers, however, the landowner might find his water rights playing second fiddle to

public rights of commercial navigation, pleasure boating, fishing and swimming, even though he owns the riverbed itself. He does, however, control access to the river from his own land.

Few states have definite rules for deciding how much of a landowner's stream-side land is "riparian" land (upon which he may use the water) or under what conditions the water may be used on "nonriparian" lands.

Disputes over water rights can arise far beyond the riverbanks. Drained-off floodwater that runs onto a neighbor's property can bring on a lawsuit. So, too, can a well that uses up a neighbor's ground water.

Other problems may come up when cities, for example, take water for people whose property

doesn't touch a river, or when someone pipes river water over to his nonriverbank land.

Unless these problems are resolved by voluntary agreements or other means, they may be settled in the courts. But court decisions are apt to apply only to the circumstances of the case on trial.

Several municipalities, local districts or government agencies may use eminent domain powers to acquire needed water rights.

A number of state legislatures have passed laws for water-use or dam permits from state or local agencies. Some of these permits are issued in perpetuity; others are for periods of, say, 10 years and are renewable. But many are subject to later changes or cancellation.

Recently, lawmakers have been cracking down on water pollution with these permit or approval requirements and water quality

standards and classifications.

A 1963 Minnesota law provides a waiver of a city's limitations on taxes and bonded indebtedness if it is ordered to improve its sewage disposal. Should the city fail to make the improvements, the state Water Pollution Control Commission may do the job, charging the costs to that city.

Additional laws may be passed in other pollution-plagued areas as lawmakers and landholders alike see a need to control the dwindling usable water. (10)

Plenty of Good Water Tops List Of Migrant Workers' Wants in Housing

Need good farm workers? Good housing is one way to attract them. It also helps to keep them coming back year after year.

Recently economists in the Oregon Agricultural Experiment Station in cooperation with ERS

queried a number of migrant workers on their housing wants.

Topping the list of items considered important and for which the migrants would most willingly pay, if necessary, were: a good water supply, good showers and plenty of hot water. Good stoves and fuel supply and good beds and mattresses followed.

By far the largest proportion of the workers preferred housing on the farm. It is close to work, saves time, requires less driving and permits more rest. They also preferred to be close to a grocery.

Good camp supervision was considered essential. The workers stressed the need to keep the camp clean, quiet and orderly. Most thought the owner, his foreman or a camp manager should be in charge to enforce camp rules. Ninety per cent said they had no objection to being told what to do in the right way by the right person. (11)

AVERAGE FARMER'S FUNDS ¹	Obtained from—							
	Sales of crops and livestock	Sales of machinery, land and buildings	Borrowing	Checking accounts	Sales of nonfarm financial assets	Nonfarm income	Other sources	Total
Dollars								
Used for—								
Meeting expenses	2,132	20	1,714	1,542	49	1,857	315	7,629
Acquiring farm assets:								
Livestock	256	—	754	438	1	15	44	1,508
Machinery	515	132	1,198	426	36	30	143	2,480
Land and buildings	—	—	736	34	326	—	—	1,096
Acquiring nonfarm financial assets	345	547	93	153	189	202	234	1,763
Increasing checking accounts	3,016	109	8	8	104	23	52	3,320
Paying debts	4,770	231	133	794	12	71	1,081	7,092
Other unspecified	82	4	250	9	13	—	—	358
Total	11,116	1,043	4,886	3,404	730	2,198	1,869	25,246
¹ June 1960 to February 1962.								

FARMER'S FUNDS—WHITHER AND WHENCE? How farmers spend their money often depends on how they acquire it. This was one important finding of a recent study of farmers' finances in three central Illinois counties.

The table above shows that most farmers used the money acquired from crop and livestock sales to pay off debts, meet current expenses, and increase checkbook balances. On the other hand, more than half of all borrowed funds went for the purchase of machinery and other farm assets.

Money obtained from sales of nonfarm financial assets (such as stocks, bonds, life insurance, etc.) generally was spent on acquiring other nonfarm financial assets. Nonfarm earnings, by and large, helped in meeting current farm expenses. (12)

Shipping orchids to Oshkosh or cattle to County Cork? Air freight rates on perishable farm products, already falling, may come down even faster as airlines bring on all-cargo and multi-purpose jets.

the ubiquitous bird



The carrier pigeon is back. It's now 150 feet long and growing. It's fast and getting faster. In a few years its speed (over 1,400 miles an hour) will make it capable of winging its way across the Atlantic in three hours or less.

A Paul Bunyan tale? No. It's the all-cargo jet plane, launched in this country in 1963.

But there is a touch of Bunyan in the phenomenal growth in air shipments of perishable farm products since the giant jet was introduced. A recent ERS survey of several major airlines shows the volume of fresh fruits and vegetables in the year ended June 1965 was four to five times the traffic volume as recently as 1961.

Cut flowers, these carriers report, make up two-fifths of their total farm product volume. Shrubbery, plants and ornamental greens also travel in large quantities by air.

The all-cargo jet can haul more than 40 tons of freight nonstop coast to coast or 35 tons nonstop from New York to Paris. And it's versatile, too. It can be changed as needed to part-cargo, part-passenger or all-passenger service.

Largely because of the cargo jet's speed, size and multiple use features, airlines have been able to cut agricultural freight rates sharply. In 1961 rates averaged between 18 and 20 cents a ton-mile. By 1965 the average was

down to 12 cents, with fruit and berry rates as low as 7 cents.

In 1964 one major airline cut rates on fruits and vegetables shipped from Los Angeles to Chicago by 17 to 40 per cent, to New York by 26 to 44 per cent. As a result, California air shipments of strawberries to Chicago jumped 45 per cent in 1965, compared with 1964; those to New York climbed 25 per cent.

Lower air rates are a boon to shippers. Now they can ship regularly by air, instead of using the mode only when a commodity is in short supply. This is reflected in total air shipments of strawberries out of California last year. At 1,100 carlot equivalents, they

were about 50 per cent higher than in 1964.

Shippers are also using air freight for fast movement of fresh figs, cherries, peaches, lettuce, poultry, eggs, meats, seafood, oriental vegetables and many other commodities.

Overseas air freight rates are also going down. Last year the rates for meat from New York to London were cut to 17 cents a pound for a minimum shipment of 2,200 pounds. Early this year fruit and vegetable rates were dropped to 16 cents a pound for a minimum cargo of 1,100 pounds. Some sales managers now see a more regular flow of these airborne items to overseas markets as a result of the rate cuts.

Looking ahead, airlines predict a marked increase in agricultural traffic. They point to such factors as lower operating costs and further rate reductions due to bigger and faster planes; better use of equipment; better packaging; more automation in freight handling at air terminals; growing consumer demand for high quality perishables and better service to consumers on the part of shippers who choose air transport.

Much, of course, depends on mutations of the bird itself.

The three-hour New York to London schedule should start in the early 1970s when a supersonic transport developed jointly by the British and French becomes operational.

A slower but bigger bird with a six-story tail should be along shortly thereafter. It's to be a commercial adaptation of a U.S. Air Force cargo transport still on the drawing boards.

Even Babe the Blue Ox might boggle at this transport's potential. Some 230 feet long, it will carry 125 tons of freight. It will be so big that airlines may have to make joint arrangements to fill it. Some say the answer is simply to fill it with loaded highway trailer trucks, driven on at take-off, driven off on landing. (13)

Texas Tip Still a Tough, Competitive Area Despite Battering of Weather

Willacy, Cameron and Hidalgo Counties—they make up the southern tip of Texas, and are farther south than all the rest of the continental United States except for the last bit of the Florida peninsula.

They also make up the Lower Rio Grande Valley, a boom or bust citrus region, where production has been as high as 28 million boxes in a season, and as low as a half million boxes.

The high was back in the mid-'40s; the low in the early '50s. But the production charts still climb and fall at the mercy of the weather. In 1960/61, the region produced 10 million boxes of citrus. The winter of 1962 sent production tumbling again. And as recently as 1964/65, the region was turning out only 3 million boxes of oranges and grapefruit.

Grapefruit is the major citrus crop, making up about 80 per cent of total production. Most of the grapefruit and oranges go into the fresh market; only about a third is processed. In peak years Texas has supplied as much as two-fifths of the total U.S. grapefruit production.

Farmers, shippers and other members of the area's citrus industry recently have been concerned about the changing market structure. Specifically, they wanted to know if the area still represented a truly competitive situation, and whether the pricing system reflected this condition in the market place.

The Lower Rio Grande Valley area is characterized by a large number of growers, relatively few shippers, and a large number of wholesale buyers.

In all, there were about 2,000 growers, 38 shippers and 938 buying firms active in the 1960/61 season. Four of the shippers, however, were cooperatives, which tended to add another dimension

to the competitive structure.

The seven largest shippers handled about half the total volume for the 1960/61 season.

Despite the large number of wholesale buyers a handful accounted for a large proportion of sales. The largest wholesaler purchased over 10 per cent of the season's output. And the 23 top buyers took half the total volume for the season.

In general, the wholesalers tended to regard citrus of a given variety, grade, and size, as a homogeneous product. When buyers dealt with more than one shipper, more often than not it was with a shipper in the same community.

However, access to supplies appears to be reasonably open and flexible.

Eighty-four per cent of the wholesale buyers in the top fourth of the group bought their supplies from four or fewer firms in a sample taken of the shippers. Only one of the buyers bought from all 14 firms in the sample. Even the small-volume purchaser commonly dealt with only a few of the sample firms, but he was as likely to deal with large shippers as with small ones.

The predominant practice among all buyers was to purchase from only one firm on any one day.

The pricing system seemed to be working fairly well in the Lower Valley. As shippers' f.o.b. prices rose, growers' prices climbed. However, the relationship was less apparent in the short run than it was for periods of more than a week's duration. With growers ordinarily selling their crop on contract to the shipper—for delivery days or weeks later—a change in grower prices would lag behind the shipper price.

The contracts did help to cut down on costs by assuring the shipper of an adequate volume and by helping to avoid the peaks and valleys of deliveries from the groves. (14)

Frost in the Bake Shop Could Warm Profits and Sales for the Industry

Tubes of ready-to-bake biscuits on the cooler shelf, pies, cakes and rolls in the freezer cabinet. One day they may be just the top of the iceberg in the business of marketing baked goods.

The bakery industry—from the wholesale baker to the retail outlet—has long been using freezing at some points in the marketing route. But new ways to adopt the economies of freezing are currently being explored.

In 1949, only three per cent of the commercial bakeries in the United States used freezing at some stage in the processing line. By 1961 the percentage had leaped to 39 per cent. The growth rate speeded up after 1954 and if the faster rate has continued since 1961 well over half the bakeries today are using freezing.

The retail baker is more apt than any other segment of the industry to make use of freezing in his operations. The larger

wholesale baker uses the process least often.

Retail bakeries produce dozens of different items in relatively small quantities and have larger variations in day-to-day sales than the other types of bakeries.

The baker can deal with larger batches of dough and get some of the economies of bigger operations. Freezing also permits less frequent deliveries and distribution over a wider distance.

The savings that could result from distributing frozen bread have been estimated to be as much as two cents a retail loaf, compared with the customary driver-salesman delivery system of today. The savings could be greater if freezing cuts down on losses from stale bread, as well it might.

But not all the advantages of freezing for the bakery industry are in the cost cutting department. The process may have promotional appeal, too.

Few customers, for example, are completely immune to the appeal of a retail bakery with its cakes and pies and breads going

on display hot and fresh from an oven on the premises. But though the appeal of such an operation is important, the cost is too.

Freezing could make it possible to combine the best of both worlds—the economies of the large-scale wholesale or chain bakery, with the appeal of the small retail outlet. Dough, produced and frozen at a large-scale center, could be delivered frozen to the retail outlet for final baking as needed.

Freezing creates a few problems too. One of them is that switching largely to frozen baked products would run counter to current distribution and promotion practices. Though the driver-salesman may be expensive, strictly in terms of distribution costs, he helps to boost the company's sales as he stocks retail shelves and maintains attractive displays for the customers.

Another problem is that frozen doughs require a relatively long, often irregular proofing time. Both characteristics work against the acceptance of frozen doughs by consumers.

FROZEN ASSET: Because it provides greater economies in the processing line and fresher bread, cakes and pastries for the customer, the use of freezing by commercial bakeries has climbed from a negligible 3 per cent in the late 1940s. Today, the figure is considerably over the 50 per cent mark.



Also, the competition is keen for expensive freezer space in the retail store, always in short supply. And studies have shown that returns for bakery goods in the retail freezer are lower than for most other products. (15)

NEW RESEARCH

Restaurant Study to Pinpoint Foods Used, Services Offered to Public

The Fitzpatricks of Boston, a sociable couple, dine on the hotel terrace many evenings in summer. The Cahills of Memphis, a peripatetic family of four, stop in roadside restaurants three times a day when they travel. The Schumans of Phoenix, with six ever hungry youngsters, end their Sunday afternoon drive with ice cream cones all around.

Americans by the millions are eating out and snacking out today more than ever before. Yet very little is known about the away-from-home-eating market, except that the wholesale value of the foods it takes is estimated to run over \$10 billion a year. And this market is growing by as much as 5 per cent annually.

To help fill the research gap, the Economic Research Service, in cooperation with segments of the food industry, has just initiated a comprehensive two-part survey.

The study is an outstanding example of industry-government cooperation. Before the study could be launched, a special team of industry and government experts worked three years to develop survey approaches and criteria.

In phase I data will be collected this spring from 6,000 restaurants all over the country as well as institutions that serve food regularly, such places as hospitals, orphanages, homes for the aged and the like.

Phase I is designed to answer a number of questions: How much

food is used by which away-from-home outlets? What types of food services do restaurants offer? What kinds of equipment do they use?

A report on phase I should be ready before the end of 1966.

Phase II, a four-season survey, will include 3,600 eating establishments. Its purpose is to break down into segments the market for individual foods by quantity, form, container size and price.

A report on phase II will likely be available by winter 1967. (16)

Corn Oil Flows into Margarine Market With U.S. Trend to Polyunsaturates

For years, corn oil was marketed as a salad and cooking oil. Then came our dietary swing to polyunsaturated fats, and corn oil found another rapidly growing outlet: margarine.

Corn oil used in margarine jumped from 1957/58's 1 million pounds to 170 million pounds forecast for the 1965/66 marketing year.

The margarine industry today accounts for 36 per cent of the country's use of corn oil. Salads and cooking still take up nearly 60 per cent. The rest goes into shortening and industrial uses, such as soap, insecticides and leather and textile processing.

With the new demand have come higher prices for this by-product of corn starch and other corn products.

Crude corn oil sold for 10 cents a pound in early 1964. The price in January 1966 was 20 cents a pound. Current prices are at their highest since late 1961, when they reached 25 cents a pound.

Supplies, too, have doubled—but over a longer period of time. 1947/48 stores were 217 million pounds. 1965/66 estimates are for 500 million pounds.

Popularity of the versatile oil will likely lead to as much as 475 million pounds being used this year. (17)

News Coverage Follows Wool Market In Spreading to Far-Flung Centers

It used to have a Boston accent. Today, wool is taking on a Texas twang, a mountain drawl.

Time was, and only about 15 years ago at that, when Boston handled most of the raw wool, and set the prices. Market News focusing on Boston provided adequate coverage for the national market.

Today the activity has swung west to such market centers as San Angelo, Texas, and Fargo, North Dakota.

In order to update their market news service for wool, and bring it into line with current trends, the Consumer and Marketing Service (C&MS) asked ERS to analyze its methods and make recommendations.

The Market News specialists were looking for a way to broaden the base for their reporting system to include the ever-increasing volume of transactions far from the New England scene.

As the mills increase their practice of contract and direct purchase, local markets become all the more important in setting prices. And the need for reliable market information from these areas also increases.

Many of the recommendations from the ERS study have been incorporated in the wool reporting system of C&MS. Since 1962, several offices in the West have started collecting information about wool prices. The information is forwarded to Boston for inclusion in the weekly report.

In 1963, the Clovis, New Mexico, market news office began reporting wool prices for the Texas-New Mexico area. Nearly all livestock market news offices in the West now report local prices and market conditions for wool.

And in 1965, a new office was opened in San Angelo, the largest sheep and lamb market in the country. (18)

In a nation of desert, mountains and jungle modern production and marketing methods are slowly replacing an ancient subsistence economy. But local output still lags behind demand.

PERUVIANS: NEW CONQUERORS OF PERU

It's been said that the Spanish conquest of Peru never ended, and with reason: the conquistadors, in subjugating the Inca Empire four centuries ago, destroyed a highly advanced food production and marketing system that has yet to regain momentum.

Peru's is a harsh terrain in any century. Its Pacific Coast is a wind-swept desert. From there the land rises abruptly to the rocky Andean plateau more than two miles high. East of the mountains lies a virtually impenetrable jungle at the headwaters of the Amazon River.

The Incas and their predecessors made the most of these geographic extremes. In the desert they built irrigation systems and discovered the use of guano ferti-

lizer for their crops. On the mountain slopes they constructed land- and crop-holding terraces. To transport crops they built suspension bridges and stairways along their widespread and intricate systems of roads and trails.

All this collapsed when the Spanish took the Indians off their farms and put them to work mining gold and silver.

Today Peru has two distinct agricultural economies: one in the progressive coastal area which grows cotton, sugar and other cash crops for export; the other in the large highland region, where descendants of the Incas manage only a subsistence agriculture.

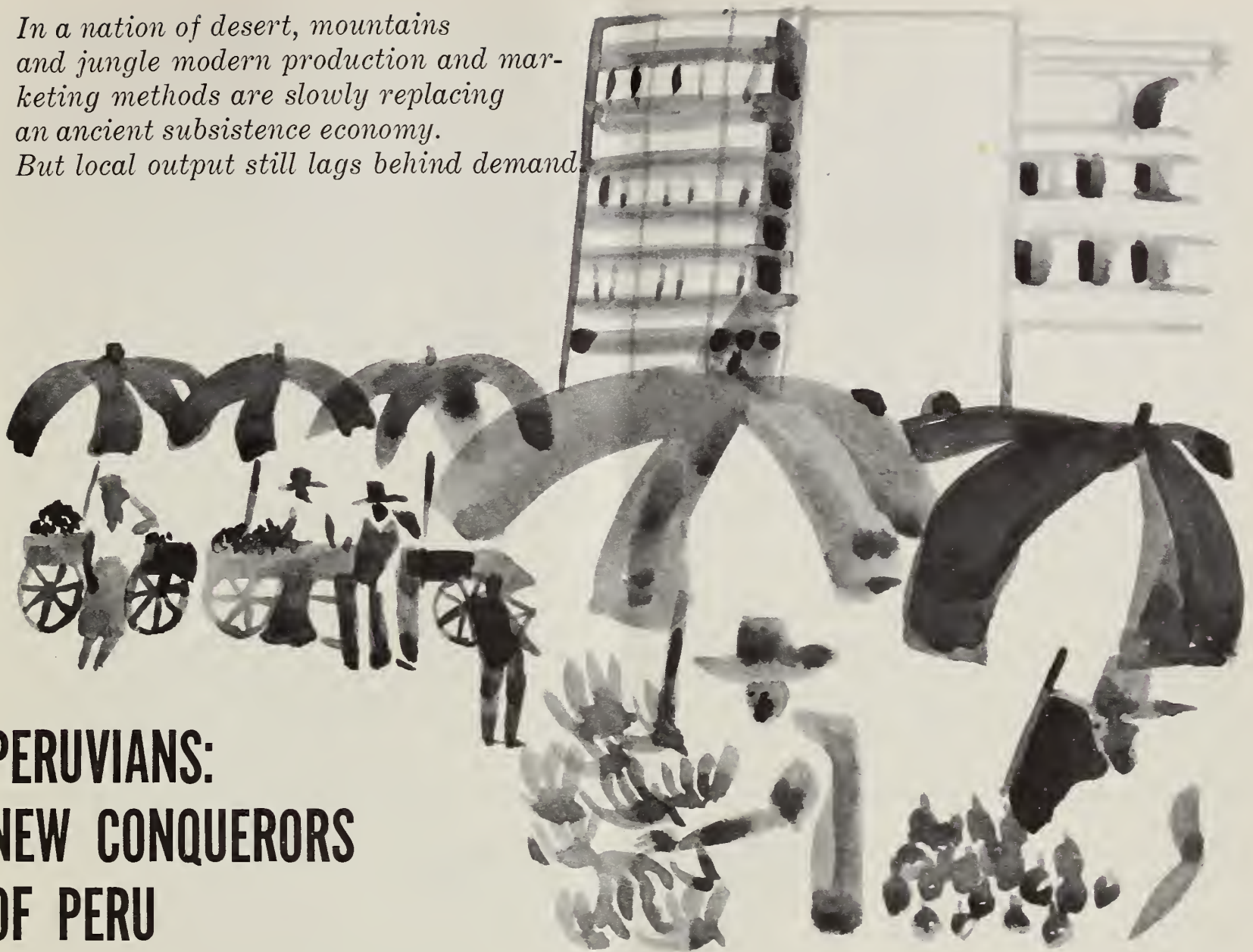
During the 20th Century population growth and a rising per

capita income have boosted demand for agricultural commodities, while external demand for Peruvian commercial export crops—chiefly cotton and sugar—also increased.

However, except for export production, Peru's agricultural output generally lags behind demand. This lag is reflected in Peru's steadily increasing imports of food since the mid-1950s.

Peruvian imports of U.S. agricultural products jumped \$8 million between 1956 and 1962 to \$24.9 million. A year later that trade was reduced to \$11.7 million as Argentina and Chile gained bigger shares of the Peruvian market.

With large sales of slaughter cattle and wheat, Argentina re-



placed the U.S. as Peru's principal source of supply, capturing 54 per cent of the market.

However, a sharp uptrend in imports of U.S. wheat and a drastic decline in imports of Argentine livestock and meat again placed these two suppliers in close competition in 1964.

Of importance to future trade is that Argentina and Peru are members of the Latin American Free Trade Association. This means that Argentina pays lower tariff rates in Peru than does the U.S.

Bolstering the U.S. competitive position has been the Food for Peace Program, which permits sales for Peruvian currency. Commodities included in this program were wheat and flour, rice, fats and oils.

Growing demand contributes to expansion in the Peruvian markets, particularly for wheat, live animals and meat, fats and oils

Our Latin Clientele

Final figures show U.S. exports to the Latin American Free Trade Association (LAFTA) amounted to \$299 million in fiscal 1965, up \$17 million from the year before. LAFTA members are Mexico and all the independent countries of South America except Bolivia and Venezuela.

In terms of value, LAFTA bought more U.S. rice, vegetable oils, oilseeds, oilcake and meal, vegetables, nuts, animal fats and oils, poultry meat, other meats and products, hides and skins and dairy products.

However, the value of our LAFTA sales in 1964/65 were less than a year earlier for wheat and flour, feed grains, cotton, tobacco and fruits. (20)

and fruits and vegetables. This demand is centered in the country's coastal region, home of nearly half the population.

Domestic wheat is usually con-

sumed in the Sierra, leaving the coast to be supplied through imports.

With its people eating more meat than Peru can produce, livestock and meat imports have climbed from \$5.7 million in 1956 to \$14.2 million in 1964. Biggest gain has been in the importation of slaughter cattle and fresh and frozen meat from Argentina.

Peru has built-in problems in supplying its own meat. Growth of the industry in the Sierra is hampered by low-quality pasture, periodic droughts and transportation problems (some mountain roads are so narrow that traffic is one-way one day and one-way in the opposite direction the next day).

But Peru is progressing. In the rain-forest, tropic-hardy Brahman cattle are being raised at experimental stations, and a slaughter and refrigeration plant has been built at Tarapoto, the

PERUVIAN CALORIE COUNT FOLLOWS INCOME ON SLOW UPWARD CLIMB

Average per capita consumption

Food groups	1956-58				1959-61			
	Per day		Per year		Per day		Per year	
	Kilograms	Calories	Grams protein	Grams fat	Kilograms	Calories	Grams protein	Grams fat
Cereals	83.9	813	22.4	5.0	88.7	860	23.7	5.2
Starchy crops ¹	154.6	343	5.9	.9	165.2	372	6.2	.9
Pulses and nuts	7.0	66	4.4	.3	8.0	76	5.1	.4
Sugar	27.6	290	.1	—	31.2	328	.1	—
Fruits and vegetables ²	83.0	73	3.2	.6	83.4	74	3.2	.6
Fats and oils	4.6	108	.2	12.1	5.9	137	.2	15.4
Milk and milk products ³	30.1	70	3.6	4.1	28.8	66	3.3	3.9
Meat	14.8	101	5.2	8.7	16.1	109	5.0	9.6
Eggs	2.3	9	.1	.7	2.8	11	.8	.8
Fish	11.0	19	2.6	.8	13.5	23	3.3	1.0
Cocoa	.4	4	.1	.2	.5	5	.1	.4
Total	419.3	1,900	48.4	33.4	444.1	2,060	51.0	38.2

¹ Includes bananas. ² Excludes bananas. ³ Includes butter. ⁴ Columns do not add to totals because of rounded food balance totals.

refrigerated meat being flown to the coast. Livestock and poultry production is increasing near the coastal cities.

Fats and oils rank high as agricultural imports, but that demand is being taken care of more and more by the output of Peruvian fish oil.

Peruvians still drink very little milk, due to limitations of production and marketing, but processed dairy products—chiefly reconstituted dry whole milk from foreign sources—are gradually finding a buying public.

Local production provides most of Peru's requirements of fruits and vegetables, but the fast-growing urban population may widen this market.

Two developments should help the Peruvian agricultural economy in the near future.

First is 1964's Agrarian Reform Law, which is putting more than two and a half million acres into the hands of some 50,000 rural workers. The Reform Law will restrict land holdings to 625 acres of irrigated land on the coast and in the Sierra and 2,500 acres in the jungle.

Second is the boom which has made Peru the number one fishing nation in the world. Export items in the fishing industry are fishmeal for animal feed and fish oil for industrial use.

Along with fishmeal, cotton has been another fast-growing Peruvian export. Native Tangüis and Pima long-stapled cottons will continue to compete with similar United States-produced cottons in our own domestic and overseas markets.

Peru faces difficulties in expanding its fishing industry, but exports of fishmeal and fish oil will continue to compete in U.S. markets for cottonseed and soybean products, especially in Europe.

Peruvian export earnings from sugar, coffee, wool and skins will probably continue at present levels. (19)

South Asia Is World's Biggest Tea Grower with 70 Per Cent of Output

The world's largest teapot is South Asia. Nearly two-thirds of the world tea area and 70 per cent of world output is concentrated in India, Ceylon and Pakistan.

India is both the region's and the world's top producer, single-handedly growing about 40 per cent of all world tea. Normally two-thirds of the Indian crop is exported each year and foreign exchange earnings from tea amount to nearly one-fifth of the country's receipts from abroad.

Ceylon—ranked second in world tea output—produces about 20 per cent of the world supply. Nearly 90 per cent of the crop is exported; again these exports are the major source of foreign exchange for Ceylon.

Pakistan has made substantial

progress in tea production considering the fact that immediately after partition from India her tea industry was in a precarious position. In 1964 Pakistani production was a record 28.7 thousand metric tons and the 1965 crop is estimated to be slightly below this level. However, gains in domestic consumption have just about equalled increases in production and the country has not been a major exporter recently.

Between 1953 and 1962, only about 1 per cent of Pakistan's foreign exchange earnings came from tea exports. Exports were small in 1963 because of domestic requirements. But due to the large 1964 and 1965 crops, exports are expected to be greater.

Other major tea producers, all located in Asia, are: China, Japan, Indonesia and Taiwan.

Though Asia continues to dominate the world tea industry—accounting for most of the production and trade—Africa and South America are gaining in importance and promise even greater competition in the future.

In South America especially tea production has made substantial gains. Output has increased nearly fourfold, rising from an average annual output of 2.3 thousand metric tons during 1950-52 to 11.2 thousand tons during 1960-62. During the same period the area planted to tea expanded by 500 per cent. The region's output of tea for 1965 is estimated at a record 20.4 thousand metric tons, about 3 per cent of total world output. About half the crop is normally exported.

The United Kingdom, of course, is far and away the world's No. 1 importer—purchasing 244 thousand metric tons during 1964. The U.S. ranks second but by comparison, our imports seem almost meager. In 1964 we purchased about 61 thousand tons of tea, but this was the largest amount in 46 years. South Asia supplied us with just about 62 per cent of all our tea. (21)

Cereals Soar

Grains and grain preparations topped the list of U.S. farm exports in the first three quarters of 1965/66, accounting for 44 per cent of all our agricultural exports so far this fiscal year.

Feed grain exports were at a record \$984 million and made up 44 per cent of all U.S. grain shipments in July-March 1965/66. Rapid increases in livestock production in Western Europe and Japan and reduced production of coarse grains and root crops in the EEC countries have bolstered the demand for U.S. feed grains.

Exports of wheat and flour were up, too. At the end of March they stood at \$1,004 million, 10 per cent higher than the \$909 million shipped in July-March 1964/65. Japan remained our No. 1 cash buyer, with the Netherlands and United Kingdom also making large purchases.

Milled rice exports were up 28 per cent, from \$133 million in July-March 1964/65 to \$170 million for the same period in 1965/66. This increase occurred because of increased rice shipments principally to Japan and South Vietnam. (22)

Malaysia Federation Makes Progress Despite Singapore Loss, Rubber Drop

Take a piece of land the size of New Mexico. Break it into three parts and set them where the Indian Ocean meets the South China Sea. Add rainfall that ranges only between heavy and very heavy (65 to 200 inches a year) and a population of 9 million.

You'd have the Federation of Malaysia, whose fast-growing economy could greatly boost its present farm trade with the U.S.

The Federation takes in the Malay Peninsula states and the territories of Sarawak and Sabah on the island of Borneo. The island-city of Singapore was also a charter member, but dropped out in mid-1965, less than two years after the Federation was formed.

The nation's population—chiefly Malay, Chinese and Indian—has grown at an average 3 per cent a year. This is among the highest rates in the world. However, a decline in the growth rate that started in the late 1950s is gradually lowering that average.

Malaysia's economic gain has been impressive despite a 35 per cent drop in export prices of its leading product, rubber. Natural

rubber exports have suffered from the competition of synthetic rubber producers. Prices of first-grade rubber fell by 12 cents to 23 cents a pound between 1960 and 1965.

But the gross national product has moved up right on through the 1960s, at about 6 per cent per year, making it among the fastest of the world's developing nations.

Biggest factor in keeping the nation's economy moving has been the high prices paid for its second-ranking product, tin. Palm oil production and prices have also gone up steadily, adding another high-value export item.

Malaysia's exports have built up large reserves of foreign exchange, and the national credit is good: the Kuala Lumpur government last year raised \$25 million by bond issues, all of which quickly sold out at 5.65 per cent.

If the Federation can continue to prosper without Singapore's help, its people will be able to afford more food and clothing.

The United States' 1964 Malaysian trade brought nearly \$74 million worth of crude rubber, gums, hides, pineapple and spices to our shores. We sold them tobacco, fresh fruits, canned vegetables and frozen poultry worth \$12.3 million. (23)

U.S. Farm Imports Total \$4.1 Billion In 1965; Near Duplicate of 1964 Bill

U.S. farm imports for calendar 1965 totaled \$4,088 million, only \$6 million more than in 1964.

Our purchases of supplementary farm products (those partially competitive with our own) stood at \$2,248 million, about 7 per cent higher than 1964's total. Most of last year's increase was due to sharp gains in imports of dutiable cattle (which were nearly double those of 1964), apparel wool, tobacco and dairy products. In addition, there were lesser increases in imports of hides and skins, meats, copra, coconut oil, wines and vegetables.

However, U.S. imports of complementary farm products (those not competitive with ours) fell from \$1,986 million in 1964 to \$1,840 million last year. This drop just about offset the gain in supplementary imports.

The value of our coffee purchases was down sharply last year to \$1,061 million from \$1,200 million the previous year. Other reductions were noted for carpet wool, cocoa beans, crude natural rubber and tea. Only imports of bananas, spice, essential oils and herbs were above 1964 levels. (24)

Foreign Spotlight

INDONESIA. The country's severe rice shortage—resulting from curtailment of imports, deterioration of the transportation system and a delayed harvest—was further aggravated in March by the worst floods in history in the important producing areas of central Java. Stores of rice in Djarkarta have fallen below the level needed to meet ration obligations and Indonesian officials have renewed efforts to purchase rice from abroad. Local prices are sky high. Rice, assigned a base price index of 100 in August 1955, passed 20,000 in September 1965. Assigning a fresh base of 100 to prices observed in Djarkarta last September 30, U.S. embassy

economists started a new series of indices. By mid-March this index had soared to 440.

NIGERIA. Late in March, the government raised import duties on 28 categories of products, lowered them on eight. Major U.S. commodities affected were: flour (on which the tariff was cut) and rice, tobacco and cigarettes (on which levies went up). U.S. exports of flour could increase substantially since certain U.S. brands already have good market acceptance. However, this gain may be offset by declines in wheat grain, rice and cigarette exports. U.S. tobacco sales probably won't be affected since Nigeria buys mostly Black Fat (for pipes and chewing) and we are the world's sole supplier. (25)

This is ERS . . .

This is the second in a series of articles on the seven divisions that make up the Economic Research Service. The series highlights the research studies and findings that help to answer the perennial ifs in American agriculture.

FOREIGN REGIONAL ANALYSIS

Somewhere in the world four children are born every second. Five years hence there will be over a half billion more people to feed than five years ago.

Can their own countries grow enough to feed them? Or better, produce a little more per person than their parents had? Will the over-populated, underdeveloped nations have enough foreign exchange to buy food from the United States and other suppliers? Will U.S. food aid still be needed? If so, how much? And to which nations?

These are broad questions that require detailed answers—for Congress as it formulates future foreign aid policy, for government officials who carry out the Congressional mandate, for agriculture which must produce the food, for the export trade which must get it overseas.

Producing a balance sheet of the world supply and demand for food five years from now—a *World Food Budget* to help answer such questions—is one responsibility of the Foreign Regional Analysis Division.

Somewhat simplified, this is what the assignment entails:

Start with 92 countries, containing 94 per cent of the world's people. (Information on such places as Outer Mongolia is too sparse to consider.)

Assign economists, working with the best available figures, to determine how much wheat or rice, how much meat and other food basics each country used in a recent 3-year period. Make this the base period for projections

five years ahead. Since there are 10 basic food groups, this initial phase repeated in 92 countries requires a total of 920 separate projections.



EUROPE

But wait. For many countries, the best available figures aren't good enough. Conduct in-depth studies of what is known about their agricultural economies and fill in gaps with estimates of crop and livestock production, based on such fragmentary information as can be found.

Next, study the factors in each of the 92 countries which are apt to help or hinder efforts to raise food output. Acreage in use or available. Climate and irrigation. Agrarian structure. Farm labor force. Production practices. Government policy. Social customs. Transportation systems. Education. Accounting for all these factors, project world food output over the next five years.

Now look at food needs in terms

of people. Calculate whether the projected output in each of the 92 countries will be more or less than its people will need for a somewhat better diet than they now have.

Finally, add up supplies in food adequate countries, balance them against supplies in deficit countries.

Result? A *World Food Budget* that shows the food gap in the less developed world—most of Latin America, Africa and Asia—will still be running into billions of dollars over the next five years and probably beyond.

At the same time the *Budget* is so detailed that FRAD can pinpoint which countries will probably be most in need of which types of foods and in what quantities.

This is an example of a major research project and the analytical approach to it taken by the Foreign Regional Analysis Division. Here are the Division's broad areas of research responsibility:

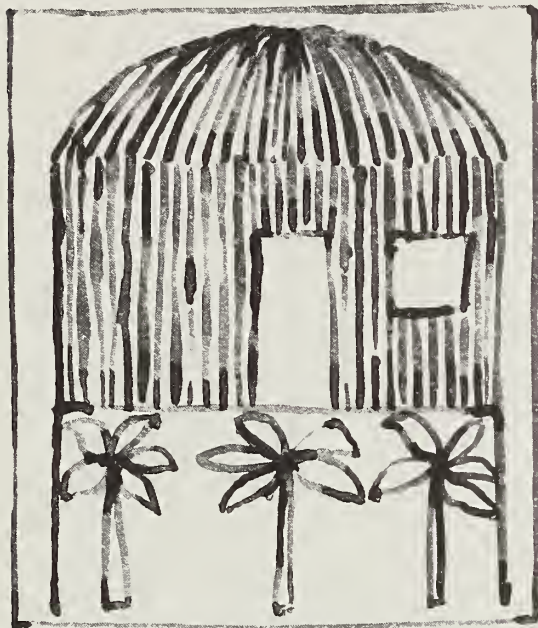
Long-Range Outlook for U.S. Agricultural Exports. The *World Food Budget* is the first responsibility in this research area.

The second is to make long-term projections—usually 10 to 15 years ahead—of how much food and fiber is likely to be produced in individual countries, the major regions and the world. Purpose of these supply-demand studies in over 30 countries is to gauge their probable farm exports and imports in the future.

A supply-demand study of Italy to 1975 is typical of the in-depth

analysis required. Look at population trends and project them to 1975. Study economic growth patterns to project national and per capita income. Assess present and potential farm acreage, yields and technology. Consider government programs to aid agriculture.

This analysis showed that the Italians' demand for food will



AFRICA—WEST ASIA

likely grow faster than their own agricultural plant can produce it. Implication? We may be selling far more meat, feed grains and other commodities to Italy by 1975.

FRAD also analyses such problems as: What share of the world market for farm products can the United States expect to have in the next five to 15 years—and, more important, what we can do to increase that share?

Australia and New Zealand agree to set up their own free trade area, much like those in Central and South America. What effect, if any, will this have on U.S. trade with the two countries?

The Soviet Union may again have grain to sell in Western Europe. Will U.S. grain be competing in the same market?

The last responsibility in FRAD's long-range outlook work is to estimate what is the probable future for U.S. exports of specific commodities. Will our wheat

exports grow or decline in the years ahead? What about feed grains? Cotton? Soybeans? Our other major export commodities?

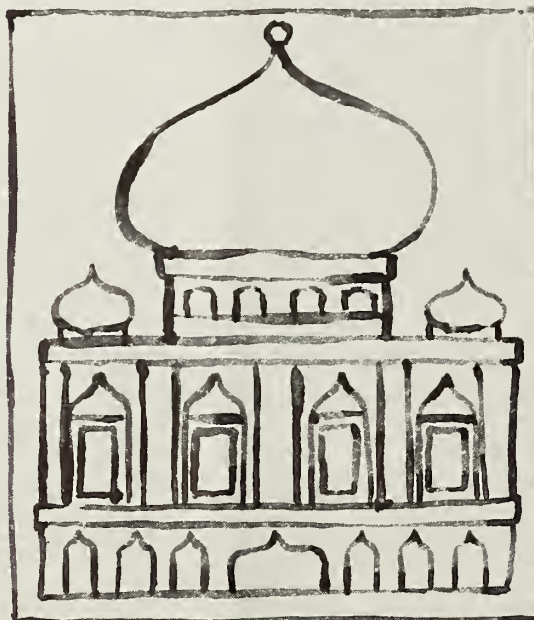
Current Situation and Short-Run Outlook. As opposed to long-term projections, this area of FRAD's research responsibility deals with what is happening this year—and next—in the farm production and trade picture of some 84 countries.

Will Australian beef production be down next year? Does this mean the United States will likely import less beef and that beef prices will be higher here at home?

Is Communist China having still another poor crop? If so, will it be buying wheat again from free world sources? Does this mean Canada, Australia and other suppliers will be competing less actively with the United States for sales in Western Europe and Japan?

Such questions are analyzed by country and compiled each year in a single report that becomes a world overview of agricultural production for the year just past and trade prospects for the year ahead. This *World Agricultural Situation* is supplemented by more detailed regional reports for the Western Hemisphere, Africa, Asia and Europe.

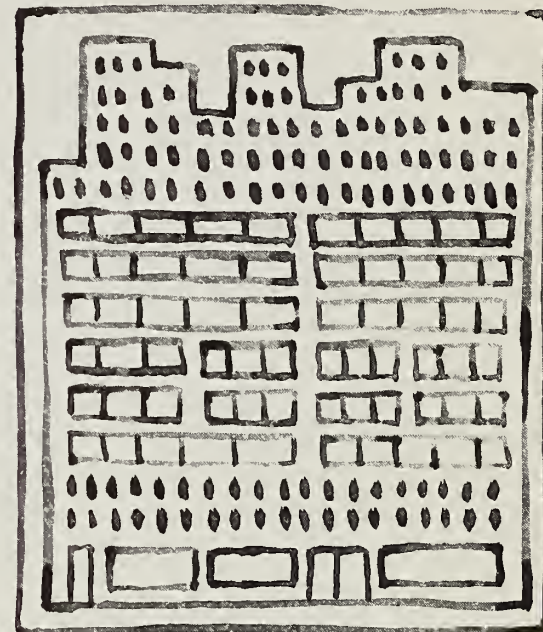
Underlying these studies are three statistical series which are



FAR EAST—OCEANIA

updated regularly. Annual indices measure the progress or slippage in 84 countries. Food balances assess the size (including imports) and quality of food supplies in these same countries. Finally, farm trade statistics are analyzed each year.

Another responsibility in this area of current situation and



WESTERN HEMISPHERE

short-run projections is to publish information—usually every five years—on government farm policies in 124 countries. Has Ghana raised or lowered tariffs on imports? What is the policy of the European Economic Community on vegetable imports from non-member countries? Does the Pakistani government or the private trade handle foreign sales and purchases of most foods?

Finally, economists in this research area prepare briefing papers for the Secretary of Agriculture, Congress and others. This is particularly true of the Division's Soviet and East European specialists who serve as one of the few official U.S. channels for information on Communist agriculture.

In sum, the Foreign Regional Analysis Division applies the principles of economic research to help disclose opportunities for new or better markets around the world for the products of American agriculture. (26)

EATING MONEY AROUND THE WORLD

Food is first in the family budget, whether the family lives in Buffalo or Bangkok. But once the family gets beyond a subsistence income, additional desires appear; food takes a smaller share of the income. In other words, when the family gets beyond a given income level, it may continue to spend more on food, but it won't increase the amount as fast as the income rises.

* * *

Once the country gets to a per capita income level of around \$500 a year, it tends to consume as many calories as all other countries above that level. The average American, for example, consumed 3,200 calories a day in 1959-61; his income was something over \$2,000. The typical Irishman consumed about 10 per cent more calories than the American, though per capita income was only \$500. The Irish citizen spent proportionately more of his income for food, but a larger part of his diet was made up of less costly foods such as cereals and potatoes. Animal products made up only about 60 per cent of the Irish protein supply; in the U.S. they represented about 70 per cent.

* * *

Food takes a smaller part of incomes in America than it does in any other sizable country. Estimates for last year put the figure at a little over 18 per cent of our disposable income—the money we use for goods, services and savings, or our after-tax income. In 1963, the figure was just a fraction under 19 per cent. As a proportion of our private consumption expenditures—smaller than disposable income—U.S. food expenditures amounted to 20.5 per cent in 1963. Canadians, Australians and Danes were not far behind the American mark.

* * *

Helpful as the comparisons are, they lose something in translation. For instance, income, in the American sense, has a different meaning, a different relative value, in a country where non-money income such as home-grown food overshadows money income. And incomes and expenditures for a country like Russia can't be translated exactly into the terms and values of a free market economy. (27)

United States

Canada

Australia

Denmark

Belgium

Sweden

Puerto Rico

United Kingdom

South Africa

Norway

Israel

Netherlands

France

Austria

Ireland

Jamaica¹

Panama¹

Spain²

Peru³

Honduras²

Italy

Japan

Greece²

Ecuador

Yugoslavia

U.S.S.R.⁴

Ceylon

Korea, Republic of

China (Taiwan)

Ghana



¹ 1961

² 1962

³ 1959

⁴ 1955

U.S. Civilians Consume Record Amount Of Food Fats and Oils During 1965

U.S. civilians used a record 9.1 billion pounds of food fats and oils last year, 2 per cent above the previous consumption record set in 1964.

Per capita consumption during 1965 averaged 47.6 pounds, roughly the same as the postwar high of 47.5 pounds in 1964. Margarine consumption stood at 9.9 pounds (actual weight) per capita in 1965, which is up .2 pound from the year before; lard use at 6.4 pounds, up .1 pound; and shortening at 13.9 pounds, up .2 pound.

Butter consumption per person dipped in 1965 from 1964 levels. Last year we consumed some 6.5 pounds (actual weight) per person, down from 6.9 pounds the year before. Cooking and salad oil use also dropped, going from 14.4 pounds per person in 1964 to 13.3 pounds last year.

Of course, if fats going into industrial uses are added in to our per capita consumption, the total for 1965 soars to 72.9 pounds (including only fat content of butter and margarine).

During 1965 each American used some 25.2 pounds of industrial fats. Of this amount, 3.7 pounds were used in soap; 4.6 pounds in drying oils (which include everything from paints to printing inks to packings), and some 16.9 pounds in other industrial uses. (28)

Cotton Use in American Mills Shows Increase; Orders Gaining on Stocks

A high level of consumer demand for textiles appears to be one reason that mill consumption of cotton during 1965/66 is expected to be some 300,000 bales larger than in 1964/65. Increasing use of textiles by U.S. military forces is also a factor in the increasing demand for cotton.

This use should total about 9.5 million bales. Some 9.3 million of these 500-pound bales will be upland cotton; 155,000 more will be extra-long staple.

The seasonally adjusted daily rate of upland cotton use in March was 36,023 bales. This level was slightly above that of February and was 4 per cent above the year-earlier rate.

Mill margins—differences between the price paid for a pound of cotton and the price received for its approximate equivalent in cloth—declined in March.

The average wholesale value of fabric made from a pound of cotton in March was 64.88 cents per pound, compared with 65.04 cents in February.

Prices paid by mills for cotton averaged 26.30 cents a pound in March; the February price also was 26.30 cents. (32).

Sweet Tooth and Sour Note

It's still tops as a topping for pancakes and waffles. The flavor is great in candies and cakes. But pure maple syrup doesn't have the fans it once had.

In the early days of this century, U. S. farmers produced about 5 million gallons of maple syrup annually by concentrating the sap collected from trees in the late winter and early spring. Today they only produce about 1.5 million gallons.

Even with imports from Canada making up about half of total consumption today, Americans eat far less maple syrup in total, and only about a fourth as much per person.

Pure maple syrup prices have been sufficiently high to encourage consumer substitution of "maple type" syrups, but not high enough to maintain U. S. production, although imports have increased.

Beyond the edges of the northeastern woods, and parts of the Midwest, pure maple syrup is becoming a specialty food.

Actually, about half the "maple type" syrups sold are blends of maple and sugar syrups. The rest are artificially flavored. (29)

Onetime Holiday Turkey Making Gains In Its Bid for Year-Round Popularity

Not long ago, Thanksgiving Day marked the high point of the short season for football and turkey.

And while that late-November Thursday still stands among the best of times for pigskin and turkey, the birds have made a strong bid to outpace the athletes in a move toward year-round popularity.

One reason for turkey's new favor among American homemakers: It now comes to market processed to the pop-in-the-oven point. It also is now available in a host of convenience products, including parts, roasts, rolls and frozen dinners.

Cold storage holdings of turkey on April 1, 1966, totaled 121 million pounds compared with the seasonal peak of 361 million pounds last November 1. A year ago last April some 16 million more pounds were lying in warehouses than were on hand this year.

Stocks will reach the year's low in early summer.

However, the buildup in stocks in the second half of this year may be more rapid than in 1965 because production is expected to be about a tenth heavier. Peak holdings in late fall are likely to be record-high.

A late-January survey indicates that canner-type turkeys accounted for 26 per cent of total holdings carried over from the 1965 crop. Further processed birds made up another 14 per cent. Canner-types are mostly young toms of heavy breeds, and are packaged without necks or giblets.

Most turkey hens are consumed during Thanksgiving and Christmas. Hens accounted for only about 5 per cent of January 1 turkey storage.

Just before the holidays, hen and tom holdings are even. (30)

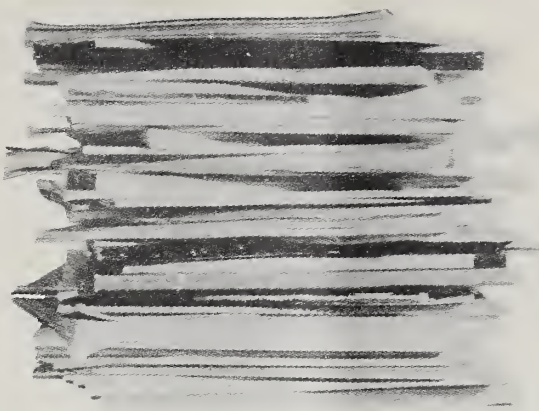
ALTERNATIVE CROP ENTERPRISES ON MAJOR UPLAND SOILS OF EAST CENTRAL AND SOUTH CENTRAL OKLAHOMA: RESOURCE REQUIREMENTS, COSTS AND RETURNS. H. E. Workman, K. C. Schneeberger, W. F. Lagrone and O. L. Walker, Oklahoma Agricultural Experiment Station, Stillwater. Okla. Agr. Expt. Sta. Bul. 523.

The overall purposes of this study are to provide guides to farmers choosing among alternative production opportunities, especially as those opportunities are affected by changes in prices and technology and to provide guides to farmers and other persons engaged in developing and administering public agricultural programs.

This study is part of a vast regional research project appraising farming adjustment opportunities in the Southern Region to meet changing conditions.

CROP ENTERPRISE COSTS FOR SOUTHEASTERN COLORADO. H. G. Sitler, Colorado Agricultural Experiment Station, Ft. Collins. Colo. Agr. Expt. Sta. Bul. 500.

What crop returns the greatest profit in southeastern Colorado? Can a farmer in that area increase his profits by changing his crop rotation? If he cannot answer those questions, the information in the tables of this report should be of value.



recent publications

The publications listed here are issued by the Economic Research Service and cooperatively by the state universities and colleges. Unless otherwise noted, reports listed here and under Sources are published by ERS. Single copies are available free from The Farm Index, OMS, U.S. Department of Agriculture, Washington, D. C., 20250. State publications may be obtained only by writing to the issuing experiment station or university after the title.

The tables include costs and returns of growing crops on hard and sandy land, costs for wheat-summer fallow rotation and wheat rotation, as well as costs for grain sorghum and broomcorn in rotation.

GHANA: SUPPLY AND DEMAND PROJECTIONS FOR FARM PRODUCTS TO 1975 WITH IMPLICATIONS FOR U.S. EXPORTS. L. E. Moe, Foreign Regional Analysis Division. FAER-30.

This Oregon-sized nation of 7.4 million people has enough cultivable land to maintain a growing population at current nutritional standards.

However, there is plenty of room for increasing farm productivity and improving the pattern of diets.

This report is part of an evaluation of long-term prospects for agricultural products throughout the world. (See October 1965 Farm Index).

PROFITABLE PLANS FOR FARMS IN THE MAJOR BOTTOMLANDS OF SOUTH CENTRAL AND EAST CENTRAL OKLAHOMA. L. G. Tweeten, A. W. Reichart and W. F. Lagrone, Oklahoma Agricultural Experiment Station, Stillwater. Okla. Agr. Expt. Sta. Bul. 641.

This study is part of a national Farm Production Economics Division project "An Economic Appraisal of Farming Adjustment Opportunities in the Southern Region to Meet Changing Conditions."

Numbers in parentheses at end of stories refer to sources listed below:

1. F. L. Garlock, Farmers and Their Debts (M); 2. P. L. Strickland and E. J. Partenheimer (SM); 3. W. B. Sundquist (SM); 4. R. K. Smith (SM); 5. D. O. Anderson, N. R. Cook and D. D. Badger, The Value of Irrigation Water in Western Oklahoma, Okla. Agri. Expt. Sta. (M*); 6. C. C. Boykin, D. D. Caton and L. Rader, Economic and Operational Characteristics of Arizona and New Mexico Range Cattle Ranches (M*); 7. R. Crom (SM); 8. Statistical Reporting Service, Number of Farms and Land in Farms, SpSy 3 (1-66) (P); 9. Farm Income Situation, FIS-202; 10. H. H. Ellis, Water Rights in the Eastern States (S); 11. M. J. Conklin and R. C. McElroy, A Survey of Migrant Farm Workers Housing in Oregon, Oregon Agricultural Experiment Station (M*); 12. J. Curnutt and R. Ferber, Financial Stock-Flow Relationships Among Central Illinois Farmers, Univ. of Illinois Studies in Consumer Savings No. 5 (P*); 13. M. DeWolfe, "Recent Trends and Prospective Developments in Air Shipments of Agricultural Commodities," Marketing and Transportation Situation, MTS-160 (P); 14. J. C. Podany, R. O. P. Parrish and R. W. Bohall, Citrus Prices and Market Structure in the Lower Rio Grande Valley of Texas (M); 15. R. V. Enochian, The Economics of

Frozen Bakery Products (S); 16. J. V. Powell (SM); 17. G. W. Kromer, Trends in U.S. Corn Oil Production and Use, 1947-65 (M); 18. C. A. O'Dell, Increasing Wool Marketing Efficiency Through Improved Market News (M); (P); 19. H. Hall, Peru—Market and Competitor for United States Farm Products (M); 20. Foreign Regional Analysis Division (SM); 21. W. F. Hall, The Tea Economy of South Asia (M); 22. D. Rahe, Foreign Agricultural Trade (M) (P); 23. P. R. Crosson, Economic Growth in Malaysia (M); 24. D. Rahe, Foreign Agriculture Trade (M); 25. Foreign Regional Analysis Division (SM); 26. J. Willett (SM); 27. S. J. Hiemstra, "Expenditures for Food," National Food Situation, NFS-115 (P); 28. Fats and Oils Situation, FOS-232 (P); 29. F. D. Gray, "The Maple Sweetener Situation," National Food Situation, NFS-115 (P); 30. Poultry and Egg Situation, PES-241 (P); 31. M. L. Cotner, A. E. Meyer and W. H. Heneberry, The Agricultural Economy of the Upper Mississippi Basin (M); 32. Cotton Situation, CS-222 (P).

*Speech (S); published report (P); unpublished manuscript (M); special material (SM); *State publications may be obtained only by writing to the experiment station or university cited.*

To stop mailing ☐ or to change your address ☐ send this sheet with new address to The Farm Index, OMS, U.S. Department of Agriculture, Rm. 1459, Washington, D. C. 20250.

Shifting Herds

A government-wide plan for the development of water and related land resources is underway in the upper Mississippi River basin. The U.S. Department of Agriculture, for its part, has prepared a preliminary report on the current agricultural economy of this region from which projections for the future can be made.

All phases of water development are to be considered in the overall picture. Included are flood control, drainage, navigation, water supply, water quality control, recreation and other beneficial uses.

Tabulation of 1964's survey will not be completed for some time. But a preliminary report on a 1959 survey indicates the trends in comparison with 1954.

The most striking change occurred in the dairy industry. The number of cows dropped 14 per cent in the upper Mississippi River basin while the rest of the nation was experiencing a 38 per cent increase. Despite this increase, the overall national figure showed a drop of only 10 per cent which points out the importance of the basin to the dairy industry. As a matter of fact, between 20 and 25 per cent of the nation's milk and cream, as well as livestock and feed grains, are produced in the area.

As for cattle and hogs, their number increased in the Mississippi River basin area at about the same rate as in the rest of the country. Basic acreage devoted to corn, wheat and soybeans increased; acreage in oats and hay decreased. (31)

THE FARM INDEX

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